



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
2002/00525

October 1, 2002

Bob Graham
Natural Resource Conservation Service
101 SW Main Street, Suite 1300
Portland, OR 97204-3221

Dear Mr. Graham:

Re: Endangered Species Act Section 7 Consultation and Magnuson-Steven Fishery
Conservation and Management Act Essential Fish Habitat Consultation for the
Strawberry Creek Geographic Priority Area 2002-2006 Watershed Restoration Projects,
Upper John Day Subbasin, Grant County, Oregon (29 projects)

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act (ESA) that addresses the Strawberry Creek Geographic Priority Area 2001-2006 Watershed Restoration Projects in Grant County, Oregon. NOAA Fisheries concludes in this Opinion that the proposed action is not likely to jeopardize Middle Columbia River (MCR) steelhead. This Opinion includes reasonable and prudent measures with terms and conditions that are necessary and appropriate to minimize the potential for incidental take associated with this project.

In addition, this document also serves as consultation on essential fish habitat (EFH) for chinook salmon pursuant to the Magnuson-Stevens Fishery Conservation and Management Act and its implementing regulation (50 CFR Part 600) (Magnuson-Stevens Act).

Please direct any questions regarding this consultation to Michael Bianchi of my staff in the Oregon Habitat Branch at 541.975.1835 ext. 221

Sincerely,

Michael R. Crouse
f.1

D. Robert Lohn
Regional Administrator

cc. Tim Unterwegner, ODFW
Jennifer O'Reilly, USFWS
Larry Bright, USFS



Endangered Species Act - Section 7 Consultation
&
Magnuson-Stevens Act
Essential Fish Habitat Consultation

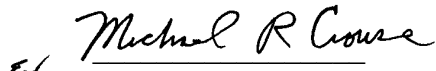
BIOLOGICAL OPINION

Strawberry Creek Geographic Priority Area 2002-2006 Watershed Restoration Projects
Upper John Day Subbasin,
John Day River Basin, Grant County, Oregon

Agency: Natural Resource Conservation Service

Consultation
Conducted By: NOAA Fisheries,
Northwest Region

Date Issued: October 1, 2002

Issued by: 
D. Robert Lohn
Regional Administrator

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1. ENDANGERED SPECIES ACT

1.1 Background

NOAA Fisheries received a letter on May 16, 2002, from the Natural Resource Conservation Service (NRCS) requesting formal consultation regarding the potential effects of the Strawberry Creek Geographic Priority Area (SCGPA) 2002-2006 Watershed Restoration Projects on Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*). The accompanying biological assessment (BA) described the projects and their potential effects on MCR steelhead. These projects are proposed as part of the individual conservation plans of five private agricultural land owners (Wishard Ranch, Oxbow Ranch, Emmel Ranch, Cary Ranch, and Ricco Ranch). The projects are funded by the United States Department of Agriculture (USDA), NRCS Environmental Quality Incentives Program (EQIP).

NOAA Fisheries contacted the NRCS requesting clarification of the construction specifications and fish passage issues. The NRCS responded on June 6th and June 14th, 2002, with the requested materials. NOAA Fisheries biologists and engineers reviewed and accepted the additional information as sufficient. The SCGPA is located within the Strawberry Creek watershed of the Upper John Day River (UJDR) subbasin. The UJDR sub-basin is part of the John Day River (JDR) basin, a major tributary of the Columbia River.

The MCR steelhead were listed under the ESA on March 25, 1999 (64 FR 14517). MCR steelhead are known to occur in the project area. Protective regulations were issued for MCR steelhead under section 4(d) of the ESA on July 10, 2000 (65 FR 42422).

The objective of this biological opinion (Opinion) is to determine whether the projects included in the SCGPA are likely to jeopardize the continued existence of MCR steelhead.

1.2 Proposed Actions

The NRCS, in cooperation with the Grant County Soil and Water Conservation District (GCSWCD), proposes to complete several projects in the SCGPA. The purpose of the projects, as stated in the BA, is to fulfill the “need to improve habitat conditions for steelhead, while continuing to provide irrigation or livestock and equipment crossings for their operations.” The NRCS has determined that the projects are “may affect, likely to adversely affect” (LAA) MCR steelhead.

The SCGPA projects are broken down into two types of actions: (1) Irrigation water diversion improvements, and (2) livestock crossings and waterways. The improvements in the diversion structures will eliminate the practice of annually constructing push-up berms with heavy machinery. Push-up berm construction severely disturbs stream gravel, releases sediment, destroys riparian vegetation, restricts flow and impedes fish passage. Use of the stream for livestock watering affects riparian vegetation, causes sediment release, increases the nitrogen into the watershed, and disturbs stream gravel. All installations involving instream work will

occur during the Oregon Department of Fish and Wildlife's (ODFW) recommended in-water work window of July 15 to August 15. Construction for each individual project will last approximately 1-5 days. The location, number, and projected date for completion of the proposed actions are found in Table 1.

Table 1. Number, type, and dates of the proposed projects in the SCGPA.

Type of Project	Landowner	Location of Ranch	Number Planned	Year Planned
Lay-flat Diversions	Oxbow Ranch	5 miles SE of Prairie City. Strawberry Creek is diverted at the White Gate Diversion.	3	2002 & 2003
	Wishard Ranch	1.2 miles SE of Prairie City. The diversion is into Slyfe Ditch from the diversion on the Oxbow Ranch.	1	2002 or 2003
	Ricco Ranch	1 mile SE of Prairie City. This diversion will take place on the Big Ditch.	2	2002
Livestock Crossings	Wishard Ranch	see above	3	2002 & 2003
	Ricco Ranch	see above	6	2002 & 2003
	Emmel Ranch	1.5 miles East of Prairie City. The Mill Ditch originates from the John Day River which passes through the ranch.	7	2002
Wood Diversion Structures	Wishard Ranch	1.2 miles SE of Prairie City. The diversion is into Slyfe Ditch from the diversion on the Oxbow Ranch.	1	2002
	Cary Ranch	Adjacent to the East edge of Prairie City below the Mill Ditch.	1	2002
Water Control Structure (knife gates)	Ricco Ranch	1 mile SE of Prairie City. This diversion will take place on the Big Ditch.	4	2002 & 2003
	Wishard Ranch	see above	1	2003

1.2.1 Livestock Crossings and Walkways

Livestock crossings and walkways are designed to replace the livestock crossings and equipment fords that are currently in use. The current unimproved crossings may cause widening of the channel increasing the width to depth ratio of the stream. They also disturb sediment and stream gravels. The proposed walkway structures will be corrugated metal pipes that are 1.5 feet in diameter (culverts), placed at the grade of the stream parallel to the stream flow. The areas around the structures will be back-filled, and equipment and animals will cross over the top of the stream rather than through it. Installation of these structures will require instream work with heavy equipment.

1.2.2 Permanent Lay-Flat Diversion Structures

Permanent lay-flat diversion structures are proposed to replace the annual practice of creating push-up berms in the stream channel. The new diversion structures consist of a concrete pad on the riverbed, two sidewalls to focus the water flow, an unscreened pipe to divert water, and an area where boards may be added to back up water behind the structure. A fishway, located opposite the diversion pipe, allows for fish passage at all water levels. This diversion structure will be used to shunt portions of the stream flow for irrigation during the irrigation season (normally May 1 to October 1), and laid flat when irrigation or the diversion of water is not necessary. The diversion structure will be made by excavating 4 feet into the streambed, using heavy machinery, and placing a concrete pad in the streambed. Stanchions will be bolted on to it to reinforce the boards as they pond water upstream of the structure. The gravel will be replaced, and in some instances steel piling (installed using an excavator) will be included in the project to insure water will not pipe around the edges of the structure.

1.2.3 Wood Diversion Structures

Water diversion structures will consist of channel iron, two pieces of u-shaped steel driven into the ground, facing each other to hold the removable wood check boards that divert water between ditches. The diversion structures will be installed to replace the practice of diverting water with tarp material and dirt. The diversion intakes will be screened. The restorative objective is to decrease the amount of sediment released into ditches.

1.2.4 Structure for Water Control

The proposed structures for water control are metal slide gates that allow the user to open and close ditches in the irrigation matrix. They will replace the method of cutting and filling holes in irrigation canals which allows for seepage into the canals. Cutting holes results in additional sediment added to the stream system.

1.3 Biological Information

The MCR steelhead evolutionarily significant unit (ESU) was listed as threatened under the ESA by NOAA Fisheries on March 25, 1999 (64 FR 14517). Biological information concerning MCR steelhead is found in Busby *et al.* (1996). The current status of the MCR steelhead, based upon their risk of extinction, has not significantly improved since the species was listed.

The JDR is the largest river system in the range of MCR steelhead free of hydro-electric dams. There is currently no artificial propagation of steelhead in the system and runs are composed almost completely of native stocks. However, there is some straying of hatchery fish into the JDR system from the Columbia River (Unterwegner and Gray 1997). The ODFW estimates yearly returns of adult steelhead to the JDR basin from 3,900 to 36,400, with estimated escapement averaging 13,988 adults since 1987. NMFS (1997) citing Chilcote (1997) states that recent MCR steelhead redd counts conducted in established index areas throughout the John Day River basin suggest basin-wide declines in redd abundance ranging from -0.9% to -5.6% over the past several years.

The JDR and its tributaries provide spawning, rearing, and migratory habitat for both adult and juvenile life stages of MCR steelhead. Adult MCR steelhead enter the Columbia River beginning in the spring and migrate upriver through the summer, fall, and winter, seeking their tributary of origin. By early the following spring, the adults have reached their natal streams and spawn in gravel redds/nests from March through early June. Deposited eggs usually hatch by the end of July of the same year. The resulting juveniles will spend from one to four years rearing to smolt size at which time they will begin their migration to the ocean. Steelhead are not expected to be present in the vicinity of the proposed action during project construction due to high stream temperatures as well as lack of sufficient stream flow caused in part by irrigation structures.

Important habitat features of the adult spawning, juvenile rearing, and adult and migratory habitat for this species are: (1) Substrate, (2) water quality, (3) water quantity, (4) water temperature, (5) water velocity, (6) cover/shelter, (7) food (juvenile only), (8) riparian vegetation, (9) space, and (10) safe passage conditions (Bjornn and Reiser 1991, NMFS 1996b, and Spence *et al.* 1996). The habitat features that the proposed project may affect are substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food, riparian vegetation, and safe passage .

1.4 Evaluating Proposed Action

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402.14 (the consultation regulations). NOAA Fisheries must determine whether the action is likely to jeopardize the continued existence of the listed species. This analysis involves the initial steps of defining the biological requirements and current status of the listed species, and evaluating the relevance of the environmental baseline to the species' current status. Subsequently, NOAA Fisheries evaluates whether the action is likely to jeopardize the continued existence of the listed species by determining if the species can be expected to survive with an

adequate potential for recovery. In making this determination, NOAA Fisheries must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action, (2) the environmental baseline, and (3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. If NOAA Fisheries finds that the action is likely to jeopardize the species continued existence, NOAA Fisheries must identify reasonable and prudent alternatives for the action.

For the proposed action, NOAA Fisheries' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NOAA Fisheries' analysis considers the extent to which the proposed action impairs the function of essential elements necessary for juvenile and adult migration, spawning, and rearing of the MCR steelhead under the existing environmental baseline.

1.4.1 Biological Requirements

The first step in the methods NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed MCR steelhead is to define the species' biological requirements that are most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list MCR steelhead for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for MCR steelhead to survive and recover to naturally-reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment. For this consultation, the biological requirements are improved habitat characteristics that function to support successful adult and juvenile migration, spawning and rearing.

MCR steelhead survival in the wild depends on the proper functioning of certain ecosystem processes including habitat formation and maintenance. The restoration of improperly functioning habitat to a more properly functioning condition will likely lead to improved survival and recovery of MCR steelhead. In conducting analyses of habitat altering actions, NOAA Fisheries defines the biological requirements in terms of a concept called Properly Functioning Condition (PFC) and applies a "habitat" approach to its analysis (NMFS 1999). The current status of MCR steelhead, based on their risk of extinction, has not improved much since the species was listed.

1.4.2 Environmental Baseline

The current range-wide status of the identified ESU is found in Busby *et al.* (1996). The identified action will occur within the range of MCR steelhead. The defined action area is the area that is directly and indirectly affected by the proposed action. The direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, stream hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect effects may occur throughout the watershed, where the actions described in this Opinion may lead to additional activities, or may affect ecological functions, thereby contributing to stream degradation. As such, the action area for the proposed activities includes the immediate portions of the watershed containing the project and those areas upstream and downstream that may reasonably be affected, temporarily or in the long term, by the proposed project.

The Strawberry Creek Watershed originates in the Strawberry Mountain Wilderness on the Malheur National Forest (MNF). Strawberry Creek is a tributary of the UJDR. Mill Ditch, located adjacent to Strawberry Creek at Depot Park in the community of Prairie City, is the only known access point for anadromous fish from the UJDR system to enter into the Strawberry drainage system. The Strawberry Creek watershed covers approximately 23.5 square miles above the first diversion point. At this diversion point the entire flow of Strawberry Creek is diverted into the Mill Ditch, and is usually dry by late in the irrigation season. Not all diversions in the SCGPA are screened, creating the possibility that there are areas where juveniles are residing in the SCGPA during the irrigation season.

Wildfires have impacted the upper watershed increasing seasonal and storm runoff that causes flood conditions in the lower watershed. The area has been severely altered for agricultural practices, including irrigation and livestock grazing. The streams and ditches are channelized, woody material has been removed, and the road density is increasing.

Push-up diversions are the main method of diverting water within the watershed. In the latter part of the irrigation season, all of the water in the Mill Ditch is removed for agricultural use. NOAA Fisheries has recently consulted on diversion structures installed on ranches within the SCGPA (refer to: NOAA Fisheries 2002/00651). The Oregon Department of Environmental Quality (ODEQ) list of Clean Water Act section 303(d) streams identifies Strawberry Creek as water quality limited for temperature.

Environmental baseline conditions within the action area were evaluated for the subject actions at the project level and watershed scales. The results of this evaluation based on the “matrix of pathways and indicators” (MPI) described in *Making Endangered Species Act Determinations of Effects for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996), follow. This method assesses the current condition of instream, riparian, and watershed factors that collectively provide properly functioning aquatic habitat which is essential for the survival and recovery of the species.

The proposed actions are all within the SCGPA. The MPI in this area reflects that all but two factors are not properly functioning. In the BA, temperature, chemical contaminants and nutrients, overall water quality, physical barriers, substrate, large woody debris, pool frequency, pool quality, off-channel habitat, refugia, width to depth ratio, streambank condition, floodplain connectivity, peak and base flows, drainage network increases, disturbance history and riparian areas were all rated as not properly functioning. Turbidity and road density were rated as at risk. No parameters are functioning properly.

1.5 Analysis of Effects

1.5.1 Effects of the Proposed Action

The effects determination in this Opinion was made using a method for evaluating current aquatic conditions, the environmental baseline, and predicting effects of actions on them. This process is described in *Making Endangered Species Act Determinations of Effect for Individual and Grouped Actions at the Watershed Scale* (NMFS 1996). The effects of actions are expressed in terms of the expected effect (restore, maintain, or degrade) on aquatic habitat factors in the action area. For the proposed actions, all conditions for the SCGPA and Strawberry Creek watershed will be maintained in the long term. Therefore the proposed action is not expected to appreciably reduce the functioning of already impaired habitats or retard the long-term progress of impaired habitats toward proper functioning condition essential to the long-term survival and recovery at the population or ESU scale. At a project scale, riparian habitat and fish passage should be improved as a result of these projects. NOAA Fisheries does expect some negative effects in the short term. Specific effects are discussed below.

Impacts of the proposed actions to stream habitat and fish populations can be separated into direct and indirect effects. Direct effects are those which contribute to the immediate loss or harm to individual fish or embryos (*e.g.*, directly stepping on a fish, trampling a redd that results in the actual destruction of embryos, or dislodging the embryos from the protective nest and ultimately destroying eggs).

Indirect effects are those impacts which occur at a later time, causing loss of specific habitat features (*e.g.*, undercut banks, sedimentation of spawning beds), localized reductions in habitat quality (*e.g.*, sedimentation, loss of riparian vegetation, changes in channel stability and structure), and ultimately cause loss or reductions of entire populations of fish, or widespread reductions in habitat quantity and/or quality.

The use of heavy equipment for the construction of the projects will cause riparian disturbance, expose bare soil, damage streambanks and release sediment. Increased turbidity and operation of heavy equipment instream will cause fish to vacate the action area. Use of heavy equipment during construction creates the opportunity for accidental spills of fuel, lubricants, hydraulic fluid, and similar contaminants into the riparian zone or water where they can injure or kill aquatic organisms if they are present. If there is no water present during construction, the activation of contaminants and sediment created from construction activities will occur when

water is reintroduced to the system. These short-term increases in turbidity can result in temporary reduction in feeding efficiency for juvenile steelhead within the action areas. The activities could also result in harassment of juvenile steelhead because this work could interrupt daily activities such as sheltering. Once juvenile fish are frightened from cover and swim into open water, they become more susceptible to predation from larger fish and avian predators.

The effects of the construction should be minimal because: (1) Construction will be conducted and completed within the ODFW prescribed July 15 to August 15 in-water work window; (2) there may not be any water in Strawberry Creek; (3) adult spawners will not be present; (4) the instream activities for each individual action are planned to take five days or less to complete; (5) the water temperatures, in any water present, are too high for rearing juveniles; and (6) construction activities will conform to the NRCS guidelines provided in their General Requirements document that describes the specific measures that will be taken to minimize or eliminate potential negative impacts to fish or fish habitat. Even with these measures to minimize negative effects there is likely to be some sediment release and disturbance to the stream substrate and potential injury or harassment of juvenile steelhead that happen to be present.

The indirect effects of the new structures will be: (1) Constricted and accelerated flows, due to the abandonment of the present diversion activities that have created the present stream and channel conditions; (2) the alteration of the present flow regime due to the ability to divert water more efficiently; (3) the alteration of the present stream morphology due to construction and implementation of the structures; (4) the integration of fish passage structures; and (5) unscreened diversions stranding juveniles in irrigation canals.

It is uncertain whether some indirect effects will have a positive or negative impact on the project area for the following reasons: (1) The width-to-depth ratio is presently too high in many of the project areas, and reducing the ratio may accelerate flows to a rate that juveniles may not be able to overcome, or may possibly increase the width/depth ratio that is lower and better suited to year-round habitat for MCR steelhead; (2) the present flow regime may be altered because of the increased efficiency of the diversions allowing for more or less water to be available for fish; and (3) alterations of present stream morphology may increase or decrease the stream's ability to handle periods of extreme flow and may result in channelization, channel incision, or scouring upstream or downstream of the proposed structures.

The proposed action will likely improve the efficiency of irrigation water management resulting in water withdrawal that may be greater or lesser than the present baseline condition. The best scientific and commercial data available does not allow NOAA Fisheries to determine if these diversion structures will remove water beyond the present baseline condition or result in improved flows. If increased withdrawal were to occur, it is reasonably certain to adversely affect MCR steelhead by: (1) Reducing stream flows; (2) increasing stream temperatures; (3) stranding fish; and (4) temporarily extirpating fish from previously available habitat. If decreased withdrawal were to occur it is likely to improve habitat for steelhead by: (1) Increasing stream flow; (2) improving fish passage; (3) expanding season-of-use; and

(4) improving riparian conditions.

The long-term, beneficial effects to MCR steelhead include the elimination of push-up berms that have radically altered and displaced stream gravels and have created fish passage problems. The inclusion of fish passage devices in the design of the structures will be beneficial, allowing steelhead access to areas previously unavailable due to passage problems created by push-up berms. The annual riparian disturbance caused by these diversions will be eliminated. Riparian and streambed disturbance caused by cattle and equipment fords will be eliminated in the areas in which culverts will replace stream fords. The addition of slide gates will decrease the amount of sediment previously introduced to the system through cutting openings in ditches to allow water flow into irrigation canals. Additionally, with the reduction of annual disturbance, riparian vegetation may be able to reestablish if the landowners make it a priority of their operation.

While the proposed projects will have a short-term negative impact on the stream, the impacts should not degrade the present baseline conditions. The installation of diversion improvements and livestock crossings could improve habitat in the long term by: (1) Improving the overall potential for fish passage; (2) reducing erosion and sediment contributions; (3) allowing for better management of the stream flow; (4) reducing the impacts to, and improving the establishment of, riparian vegetation; (5) decreasing the disturbance of stream substrate; and (6) creating the potential for improved stream morphology.

1.5.2 Cumulative Effects

“Cumulative effects” are defined in 50 CFR 402.02 as those effects of “future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation.” The “action area” is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR 402.02). The “action area” for this consultation, therefore, includes the entire Strawberry Creek watershed.

The NRCS has identified several activities occurring on private lands in this watershed that are reasonably certain to continue in the future. These include livestock operations and irrigation practices that include push-up berms.

Significant improvement in MCR steelhead reproductive success outside of federally-administered land is unlikely without changes in land use and land management practices occurring within these non-federal riparian areas in the JDR basin. NOAA Fisheries is not aware of any other specific future actions which are reasonably certain to occur on non-federal lands.

1.6 Conclusion

NOAA Fisheries has determined that, when the effects of the fish habitat restoration activities and actions associated with this project are added to the environmental baseline and the cumulative effects occurring in this area, the SCGPA Watershed Restoration Projects are not likely to jeopardize the continued existence of MCR steelhead. NOAA Fisheries believes that the proposed construction activities will cause some minor short-term increases in stream turbidity, sediment, and substrate disturbance in Strawberry Creek. The five proposed lay-flat diversion projects will replace push-up berms and provide for improved fish passage. Thus, the proposed action is not expected to appreciably reduce the functioning of already impaired habitats, or retard the long-term progress of impaired habitats toward proper functioning condition essential to the long-term survival and recovery at the population or ESU scale.

1.7 Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of the proposed actions on listed species, or to develop additional information. NOAA Fisheries has the following conservation recommendations regarding SCGPA Watershed Restoration Projects:

1. The NRCS should implement the projects in a sequential order that will be the most beneficial to the listed species. Restoration activities should either begin downstream and move up into the watershed to promote the progressive restoration of fish habitat, or be prioritized by their ability to improve fish passage and habitat.
2. The NRCS should explore projects that will fund improved fish passage into Strawberry Creek from the UJDR to improve the efficacy of their habitat restoration projects for steelhead.
3. The NRCS should explore funding fish habitat restoration projects that will provide more instream water to improve steelhead passage and recovery within the Strawberry Creek Watershed.
4. The NRCS should develop and implement a conservation strategy that clearly describes a logical progression for fish habitat restoration in the SCGPA.

1.8 Reinitiation of Consultation

As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained or is authorized by law and if: (1) The amount or extent of taking specified in the incidental take statement is exceeded, (2) new information reveals effects of the agency action that may affect

listed species in a manner or to an extent not considered in this Opinion, (3) the action is modified in a way that causes an effect on listed species that was not previously considered, or (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of authorized incidental take is exceeded, any operations causing such take must cease pending conclusion of the reinitiated consultation.

2. INCIDENTAL TAKE STATEMENT

Section 9 and rules promulgated under section 4(d) of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. “Harm” is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. “Harass” is defined as actions that create the likelihood of injuring listed species by annoying it to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. “Incidental take” is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of threatened species. If necessary, it also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.1 Amount or Extent of Take

NOAA Fisheries anticipates that the proposed action is reasonably certain to result in incidental take of species listed in this Opinion because of detrimental effect from instream and near-channel construction activities which include increased short-term turbidity, sediment input, riparian disturbance or contamination from construction. Take may also occur from the entrainment of juveniles due to unscreened diversions and possible loss of habitat due to increased water withdrawal as a result of more efficient diversion facilities.

The effects of such actions are unquantifiable in the short term and are not expected to be measurable as long-term harm to habitat features or by long-term harm to salmonid behavior or population levels. Therefore, even though NOAA Fisheries expects some low level incidental take to occur due to the proposed action covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate the specific amount of incidental take to the species itself. In instances such as these, NOAA Fisheries designates the expected level of take as “unquantifiable.” Based on the information in the

biological assessment, NOAA Fisheries anticipates that an unquantifiable amount of incidental take could occur as a result of the habitat altering actions covered by the Opinion. The extent of the take includes the aquatic and associated riparian habitats in the Strawberry Creek watershed.

2.2 Effect of the Take

In this Opinion, NOAA Fisheries has determined that the level of anticipated take is not likely to result in jeopardy to MCR steelhead.

2.3 Reasonable and Prudent Measures

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to minimize the likelihood of take of MCR steelhead resulting from the actions covered by this Opinion. The NRCS shall:

1. Minimize the likelihood of incidental take resulting from instream and near-stream construction activities by limiting direct and indirect effects of inchannel or near-channel heavy equipment use on spawning adult MCR steelhead, steelhead eggs, pre-emergent fry, and rearing juveniles are avoided or minimized. The project design and implementation will be carried out in such a manner to minimize the impacts to MCR steelhead and their habitat.
2. Minimize the likelihood of incidental take resulting from construction activities in or near watercourses by ensuring that an effective spill prevention, containment, and control plan is developed, implemented, and maintained to avoid or minimize point-source pollution both into and within watercourses over the short term and the long term.
3. Minimize the likelihood of incidental take resulting from a possible increase in the volume of water withdrawn and increased number of juveniles entrained above the current environmental baseline conditions.
4. Complete a comprehensive monitoring and reporting program to ensure implementation of requirements found in this Opinion.

2.4 Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the NRCS must comply with the following terms and conditions, which will implement the reasonable and prudent measures described above. These terms and conditions should be incorporated into construction contracts and subcontracts to ensure that the work is carried out in the manner prescribed. Implementation of the terms and conditions within this Opinion will further reduce the risk of impacts to MCR steelhead and their habitat in Strawberry Creek. These terms and conditions are non-discretionary.

1. To implement Reasonable and Prudent Measure #1 (heavy equipment use), the NRCS shall ensure that:
 - a. Minimum area. Construction impacts will be confined to the minimum area necessary to complete the project.
 - b. In-water work. All work within the active channel that could contribute sediment or toxicants downstream will be completed within the ODFW approved in-water work period (July 15 - August 15). Work will be completed from the bank whenever possible to minimize disturbance of the stream bottom wherever possible.
 - c. Work period extensions. Extensions of the in-water work period, including those for work outside the wetted perimeter of the stream but below the ordinary high water mark must be approved in writing by biologists from NOAA Fisheries.
 - d. Isolation of in-water work area. During in-water work, if listed fish may be present, including incubating eggs or juveniles, and the project involves either significant channel disturbance or use of equipment instream, ensure that the work area is well isolated from the active flowing stream within a cofferdam (made out of sandbags, sheet pilings, inflatable bags, etc.), or similar structure, to minimize the potential for sediment entrainment.
 - e. Water pumped from the work isolation area will be discharged into an upland area providing over ground flow before returning to the creek. Discharge will occur so that it does not cause erosion. Discharges into potential fish spawning areas or areas with submerged vegetation are prohibited.
 - f. Fish passage. Work will not inhibit passage of any adult or juvenile salmonid species throughout the construction period or after project completion. All culvert and road designs must comply with ODFW guidelines and criteria for stream-road crossings with appropriate grade controls to prevent culvert failure due to changes in stream elevation. Channel modifications which could adversely affect fish passage, such as by increasing water velocities, are not authorized by this Opinion.
 - g. Temporary access roads. Temporary access roads are designed as follows:
 - i. Existing roadways or travel paths will be used whenever possible.
 - ii. No stream crossings will occur at known or suspected spawning areas or within 300 feet upstream of such areas where impacts to spawning areas may occur.
 - iii. Where stream crossings are essential, the crossing design will accommodate reasonably foreseeable risks (*e.g.*, flooding and associated bedload and debris) to prevent diversion of streamflow out of the channel and down the road in the event of crossing failure.
 - iv. Vehicles and machinery must cross riparian areas and streams at right angles to the main channel wherever possible.
 - v. The number of stream crossings shall be minimized.

- h. Cessation of work. All project operations, except efforts to minimize storm or high flow erosion, will cease under high flow conditions that may result in inundation of the project area.
- i. Pre-construction activities. Before significant alteration of the action area, the following actions will be accomplished:
 - i. Boundaries of the clearing limits associated with site access and construction are flagged to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.
 - ii. The following erosion control materials are onsite:
 - (1) A supply of erosion control materials (*e.g.*, silt fence and straw bales) is on hand to respond to sediment emergencies. Sterile straw or hay bales will be used when available to prevent introduction of weeds.
 - (2) An oil absorbing, floating boom is available on-site during all phases of construction whenever surface water is present.
 - iii. All temporary erosion controls (*e.g.*, straw bales, silt fences) are in place and appropriately installed downslope of project activities within the riparian area. Effective erosion control measures will be in place at all times during the contract, and will remain and be maintained until permanent erosion control measures are effective.
- j. Heavy Equipment. Heavy equipment use will be restricted as follows:
 - i. When heavy equipment is required, the equipment having the least impact will be used (*e.g.*, minimally sized, rubber tired).
 - ii. Excavators will have properly guarded belly pan for pioneering type of work in rough terrain.
 - iii. Heavy equipment will be fueled, maintained and stored as follows:
 - (1) All equipment that is used for instream work will be cleaned before conducting operations below the bankfull elevation. External oil and grease will be removed, along with dirt and mud. No untreated wash and rinse water will be discharged into streams and rivers without adequate treatment.
 - (2) Vehicle staging, maintenance, refueling, and fuel storage areas will be located outside riparian areas.
 - (3) All vehicles operated within riparian areas of any stream or water body will be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected will be repaired before the vehicle resumes operation.
 - (4) When not in use, vehicles will be stored in the vehicle staging area away from any water course.
- k. Site preparation. Site preparation, including removal of stream materials, topsoil, surface vegetation and major root systems, is completed in the following manner:

- i. Any instream large wood or riparian vegetation moved or altered during construction will stay on the site or be replaced with a functional equivalent.
 - ii. Tree removal will be mitigated for onsite by a 2:1 replanting ratio.
 - iii. Whenever the project area is to be revegetated or restored, native channel material, topsoil and native vegetation removed for the project should be stockpiled for redistribution on the project area.
- l. Earthwork. Earthwork, including drilling, excavation, dredging, filling and compacting, is completed in the following manner:
 - i. Boulders, rock, woody materials and other natural construction materials used for the project must be obtained from outside the 100 year flood plain.
 - ii. Material removed during excavation will only be placed in locations where it cannot enter streams or other water bodies.
 - iii. All exposed or disturbed areas will be stabilized to prevent erosion.
 - (1) Areas of bare soil within 150 feet of waterways, wetlands or other sensitive areas will be stabilized by native seeding,¹ mulching, and placement of erosion control blankets and mats, if applicable, quickly as reasonable after exposure, but within seven days of exposure.
 - (2) Seeding outside the growing season will not be considered adequate nor permanent stabilization.
 - iv. All erosion control devices will be inspected before, during, and after construction to ensure that they are working adequately, and erosion control devices will be inspected periodically to ensure proper function.
 - v. If inspection shows that the erosion controls are ineffective, work crews will be mobilized immediately, during working and off-hours, to make repairs, install replacements, or install additional controls as necessary.
 - vi. Erosion control measures will be judged ineffective when turbidity plumes are evident in waters occupied by listed salmonids during any part of the year.
 - vii. If soil erosion and sediment resulting from construction activities are not effectively controlled, the engineer will limit the amount of disturbed area to that which can be adequately controlled.
 - viii. Sediment will be removed from sediment controls once it has reached 1/3 of the exposed height of the control. Whenever straw bales are used, they will be staked and dug into the ground 5 inches (12 cm). Catch basins will be maintained so that no more than 6 inches (15 cm) of sediment depth accumulates within traps or sumps.

¹ By Executive Order 13112 (February 3, 1999), Federal agencies are not authorized to permit, fund or carry out actions that are likely to cause, or promote, the introduction or spread of invasive species. Therefore, only native vegetation that is indigenous to the project vicinity, or the region of the state where the project is located, shall be used.

- ix. Sediment-laden water created by construction activity will be filtered before it leaves the right-of-way or enters a stream or other water body. Silt fences or other detention methods will be installed as close as reasonable to culvert outlets to reduce the sediment entering aquatic systems.
- m. Site restoration. Site restoration and cleanup, including protection of bare earth by seeding, planting, mulching and fertilizing, is done in the following manner:
 - i. All damaged areas will be restored to pre-work conditions including restoration of original streambank lines, and contours.
 - ii. All exposed soil surfaces, including construction access roads and associated staging areas, will be stabilized at finished grade with mulch, native herbaceous seeding, and native woody vegetation before October 1. On cut slopes steeper than 1:2, a tackified seed mulch will be used so that the seed does not wash away before germination and rooting occurs. In steep locations, a hydro-mulch will be applied at 1.5 times the normal rate.
 - iii. Disturbed areas will be planted with native vegetation specific to the project vicinity or the region of the state where the project occurs, and will comprise a diverse assemblage of woody and herbaceous species.
 - iv. Plantings will be arranged randomly within the revegetation area.
 - v. All plantings will be completed before June 1 of the following Spring.
 - vi. No herbicide application will occur within 100 year flood plain as part of this permitted action. Mechanical removal of undesired vegetation and root nodes is permitted.
 - vii. No surface application of fertilizer will be used within 50 feet of any stream channel as part of this permitted action.
 - viii. Plantings in areas disturbed by construction activities will achieve an 80 percent survival success after three years.
 - (1) If success standard has not been achieved after three years, the NRCS will submit an alternative plan to NOAA Fisheries. The alternative plan will address temporal loss of function.
 - (2) Plant establishment monitoring will continue and plans will be submitted to the NRCS until site restoration success has been achieved.
- 2. To implement reasonable and prudent measure #2 (pollution control), the NRCS shall ensure that:
 - a. Pollution and erosion control plan. A pollution and erosion control plan (PECP) will be developed for each authorized project to prevent point-source pollution related to construction operations. The PECP will contain the pertinent elements listed below and meet requirements of all applicable laws and regulations.
 - i. Methods that will be used to prevent erosion and sedimentation associated with access roads, stream crossings, construction sites, borrow pit

- operations, haul roads, equipment and material storage sites, fueling operations and staging areas.
 - ii. Methods that will be used to confine and remove and dispose of excess concrete, cement and other mortars or bonding agents, including measures for washout facilities.
 - iii. A description of the hazardous products or materials that will be used, including inventory, storage, handling, and monitoring.
 - iv. A spill containment and control plan with notification procedures, specific clean up and disposal instructions for different products, quick response containment and clean up measures that will be available on site, proposed methods for disposal of spilled materials, and employee training for spill containment.
 - v. Measures that will be taken to prevent construction debris from falling into any aquatic habitat. Any material that falls into a stream during construction operations will be removed in a manner that has a minimum impact on the streambed and water quality.
 - vi. Treated wood materials will not be used in the construction of or the as a part of an instream structure.¹
3. To implement Reasonable and Prudent Measure #3 (water withdrawal), the NRCS shall ensure that the project is designed to ensure that impacts to natural resources have been avoided or minimized.
- i. The design of the proposed irrigation diversion structures enables the irrigators to comply with all Oregon Administrative Rules and Oregon Revised Statutes promulgated by the Oregon Water Resources Department (OWRD) as they relate to rate and duty of water use. "Rate and duty of water" means quantity of water expressed in cfs (rate) and the total volume of water expressed in acre feet (duty) as allowed in the water use permit. The responsibility for ensuring compliance with water rights laws rests with the OWRD.
 - ii. Project design shall include the installation of a totalizing flow meter device on all diversion structures for which installation of this device is possible.
 - iii. Diversion structures shall be screened to meet NOAA Fisheries criteria.²

¹ "Treated wood" means lumber, pilings, and other wood products preserved with alkaline copper quaternary (ACQ), ammoniacal copper arsenate (ACA), ammoniacal copper zinc arsenate (ACZA), copper naphthenate, chromated copper arsenate (CCA), pentachlorophenol, or creosote.

² National Marine Fisheries Service, *Juvenile Fish Screen Criteria* (revised February 16, 1995) and *Addendum: Juvenile Fish Screen Criteria for Pump Intakes* (May 9, 1996) (guidelines and criteria for migrant fish passage facilities, and new pump intakes and existing inadequate pump intake screens) (<http://www.nwr.noaa.gov/1hydroweb/ferc.htm>).

4. To implement Reasonable and Prudent Measure #4 (monitoring and reporting), the NRCS shall submit a report by March 1 of the following year to NOAA Fisheries describing the previous years activities related to this project. This report will consist of the following information:
- a. Project identification.
 - i. project name;
 - ii. project location by 5th field hydrological unit code (HUC) and lat long;
 - iii. starting and ending dates for work completed; and
 - iv. the NRCS contact person.
 - b. Isolation of in-water work area. All projects involving isolation of in-water work areas must include a report with the following information:
 - i. The name and address of the fish biologist in charge of the project;
 - ii. methods used to isolate the work area and minimize disturbances to ESA-listed species;
 - iii. stream conditions before and following placement and removal of barriers;
 - c. Pollution and erosion control. A summary of all pollution and erosion control inspection reports, including descriptions of any failures experienced with erosion control measures, efforts made to correct them and a description of any accidental spills of hazardous materials.
 - d. Site restoration. Summary of the following conditions:
 - i. Log and rock structure repair.
 - ii. Planting composition and density.
 - iii. A Summary of planting and seeding efforts.
 - iv. A narrative assessment of the project's effects on natural stream function.
 - e. The annual report will be submitted to:

Branch Chief - Portland
NOAA Fisheries
Attn: 2002/00525
525 NE Oregon Street, Suite 500
Portland, OR 97232

- f. NOTICE. If a dead, injured, or sick endangered or threatened species specimen is found, initial notification must be made to the NOAA Fisheries Law Enforcement Office, at Vancouver Field Office, 600 Maritime, Suite 130, Vancouver, Washington 98661; phone: 360/418-4246. Care should be taken in handling sick or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. Besides the care of sick or injured endangered and threatened species, or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence with the specimen is not unnecessarily disturbed.

3. MAGNUSON-STEVENSON ACT

3.1 Background

The objective of the essential fish habitat (EFH) consultation is to determine whether the proposed action may adversely affect designated EFH for relevant species, and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH resulting from the proposed action.

3.2 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires the inclusion of EFH descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NOAA Fisheries on activities that may adversely affect EFH.

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of essential fish habitat: “Waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle (50 CFR 600.110).

Section 305(b) of the MSA [6 USC 1855(b)] requires that:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;
- NOAA Fisheries shall provide conservation recommendations for any Federal or state Activity that may adversely affect EFH;
- Federal agencies shall within 30 days after receiving conservation recommendations from NOAA Fisheries provide a detailed response in writing to NOAA Fisheries.
- The response shall include a description of measures proposed by the agency for avoiding, mitigating or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NOAA Fisheries, the Federal agency shall explain its reason for not following the recommendations.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such

as upstream and upslope activities, that may have an adverse effect on EFH. Therefore, EFH consultation with NOAA Fisheries is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

3.3 Identification of EFH

The Pacific Fisheries Management Council (PFMC) has designated EFH for three species of Pacific salmon: Chinook (*Oncorhynchus tshawytscha*); coho (*O. kisutch*); and Puget Sound pink salmon (*O. gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based on this information. The John Day River and its tributaries are designated EFH for chinook salmon.

3.4 Proposed Action

The proposed action is detailed above in section 1.2 of the ESA portion of this Opinion. The action area includes the SCGPA projects, and adjacent stream and riparian areas. This area has been designated as EFH for various life stages of chinook salmon.

3.5 Effects of Proposed Action

As described in detail in the ESA portion of this consultation, the proposed activities may result in detrimental, short-term, adverse effects to a variety of habitat parameters.

3.6 Conclusion

NOAA Fisheries believes that the proposed action may adversely affect the EFH for chinook salmon.

3.7 EFH Conservation Recommendations

Pursuant to Section 305(b)(4)(A) of the Magnuson-Stevens Act, NOAA Fisheries is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. In addition to conservation measures proposed for the project by the NRCS and SWCD, all of the reasonable and prudent measures and the terms and conditions contained in section 2.4 of the ESA portion of this Opinion are applicable to salmon EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH conservation recommendations.

3.8 Statutory Response Requirement

Please note that the Magnuson-Stevens Act (section 305(b)) and 50 CFR 600.920(j) requires the NRCS to provide a written response to NOAA Fisheries' EFH conservation recommendations within 30 days of its receipt of this letter. The response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity on EFH. If the response is inconsistent with NOAA Fisheries' conservation recommendations, the NRCS shall explain its reasons for not following the recommendations.

3.9 Supplemental Consultation

The NRCS must reinitiate EFH consultation with NOAA Fisheries if the action is substantially revised or new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920).

4. LITERATURE CITED

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this Opinion.

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